

PATENT COOPERATION TREATY

REC'D 03 AUG 2005
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From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

h/8

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/GB2005/000180

International filing date (day/month/year)
19.01.2005

Priority date (day/month/year)
21.01.2004

International Patent Classification (IPC) or both national classification and IPC
C07D251/52, C07D251/18, A61K31/53

Applicant
ASTRAZENECA AB

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☐ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2005/000180

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. II Priority

1. ☒ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43bis.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2005/000180

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

III NON-ESTABLISHMENT

- 1) Claims 16-18 relate to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iv) PCT. Consequently, no opinion will be formulated with respect to the industrial applicability of the subject-matter of these claims (Article 34(4)(a)(i) PCT).
- 2) Present claim 1 relates to an extremely large number of possible compounds. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Moreover, the initial phase of the search revealed a very large number of documents relevant to the issue of novelty. So many documents were retrieved that it is impossible to determine which parts of the claim(s) may be said to define subject-matter for which protection might legitimately be sought (Article 6 PCT). In fact, some 1000 structures potentially relevant for the assessment of novelty have been detected. Consequently, the search has been restricted to compounds according to Claim 2.

V REASONED STATEMENT

It should be noted that the assessment of novelty, inventive step and industrial applicability is based on the searched matter, only.

1. PRIOR ART

The documents cited in the International Search Report

D1: DATABASE CAPLUS [Online] CHEMICAL ABSTRACTS SERVICE,
COLUMBUS, OHIO, US; SAKAEDA, TAKESHI ET AL: "Water-thinned inks for
jet printing" XP002335253 retrieved from STN Database accession no.
1992:154010

- D2: WO 03/105853 A (CHEMOCENTRYX, INC; PENNELL, ANDREW, M., K;
AGGEN, JAMES, B; WRIGHT, J.) 24 December 2003 (2003-12-24)
D3: WO 03/059893 A (ASTRAZENECA AB; BAXTER, ANDREW; JOHNSON,
TIMOTHY; KINDON, NICHOLAS; RO) 24 July 2003 (2003-07-24)
D4: WO 01/58902 A (ASTRAZENECA AB; BONNERT, ROGER; CAGE, PETER;
HUNT, FRASER; WALTERS, LA) 16 August 2001 (2001-08-16)

have been considered for the examination procedure.

2. NOVELTY

The subject-matter of Claims 1,2,4 and 5 is anticipated by D1 (Article 33(2) PCT).
See search report for details.

3. INVENTIVE STEP

The claimed subject-matter which may be considered as novel appears to fulfil the requirements of Article 33(3) PCT for the following reasons.

The closest state of the art for the present application is equally represented by D2-D4. All documents disclose structurally related compounds as chemokine receptor modulators and/or antagonists. D2 explicitly describes a triazine compound (page 52). However, the D2 compounds are piperazine derivatives substituted with a heteroaryl group through a linker. This is not possible according to the presently claimed definitions. D3 and D4 disclose pyrazine and pyrimidine derivatives, respectively with similar or overlapping definitions of the substituents. In view of D2-D4, either alone or in combination, a skilled person would not have arrived at the present triazine compounds without inventive ingenuity.

4. INDUSTRIAL APPLICABILITY

No objection for Claims 1-15 and 19-21. For the assessment of the present Claims

16-18 on the question whether they are industrially applicable, no unified criteria exist in the PCT Contracting States. The patentability can also be dependent upon the formulation of the claims. The EPO, for example, does not recognize as industrially applicable the subject-matter of claims to the use of a compound in medical treatment, but may allow, however, claims to a known compound for first use in medical treatment and the use of such a compound for the manufacture of a medicament for a new medical treatment.

VI CERTAIN DOCUMENTS CITED

D5: WO 2004/011443 A (ASTRAZENECA AB; ASTRAZENECA UK LIMITED;
EBDEN, MARK, RICHARD; MEGHANI,) 5 February 2004 (2004-02-05)

This document discloses pyrimidine derivatives as chemokine receptor modulators. The priority documents have not been checked re Article 33(3) PCT.

VIII CERTAIN OBSERVATIONS (CLAIMS)

The object of Claims 4-6 is unclear (Art. 6 PCT). These claims were, however, treated as claims dependent on Claim 1.